**Greater Cleveland Council of Teachers of Mathematics**

**RICH TASK PROCESSING TEMPLATE**

**Mathematics III**

**Name of Resource:**

**Submitted by: Source (book, website, etc.):**

**CCSS-M Content Alignment:**

Not all clusters require equal emphasis of instructional time. Which cluster(s) does this resource address?

|  |  |
| --- | --- |
| **✓ Check all that apply.** | **Cluster** |
|  | **Quantities****(N-Q)** |
|  | Reason quantitatively and use units to solve problems (2) |
|  | **Seeing Structure in Expressions (A-SSE)** |
|  | Interpret the structure of expressions (2) |
|  | Write expressions in equivalent forms to solve problems (4) |
|  | **Arithmetic with Polynomials and Rational Expressions (A-APR)** |
|  | Understand the relationship between zeros and factors of polynomials (2, 3) |
|  | Use polynomial identities to solve problems (4) |
|  | Rewrite rational expressions (6) |
|  | **Creating Equations****(A-CED)** |
|  | Create equations that describe numbers or relationships (1, 2) |
|  | **Reasoning with Equations and Inequalities (A-REI)** |
|  | Understand solving equations as a process of reasoning and explain the reasoning (1, 2) |
|  | Represent and solve equations and inequalities graphically (11) |
|  | **Interpreting Functions (F-IF)** |
|  | Interpret functions that arise in applications in terms of the context (4, 6) |
|  | Analyze functions using different representations (7, 9) |
|  | **Building Functions (F-BF)** |
|  | Build new functions from existing functions (3, 4a) |
|  | **Linear, Quadratic, and Exponential Models****(F-LE)** |
|  | Construct and compare linear, quadratic, and exponential models and solve problems (4) |
|  | **Trigonometric Functions (F-TF)** |
|  | Extend the domain of trigonometric functions using the unit circle (1, 2) |
|  | Model periodic phenomena with trigonometric functions (5) |
|  | Prove and apply trigonometric identities (8) |
|  | **Congruence (G-CO)** |
|  | Make geometric constructions (12, 13) |
|  | **Circles (G-C)** |
|  | Understand and apply theorems about circles (1, 2, 3) |
|  | Find arc lengths and areas of sectors of circles (5) |
|  | **Expressing Geometric Properties with Equations (G-GPE)** |
|  | Translate between the geometric description and the equation of a conic section (1, 2) |
|  | Use coordinates to prove simple geometric theorems algebraically (4, 5, 6, 7) |
|  | **Geometric Measurement and Dimension (G-GMD)** |
|  | Visualize relationships between two-dimensional and three-dimensional objects (4) |
|  | **Modeling with Geometry (G-MG)** |
|  | Apply geometric concepts in modeling situations (1, 2, 3) |
|  | **Interpreting Categorical and Quantitative Data (S-ID)** |
|  | Summarize, represent, and interpret data on a single count or measurement variable (4) |
|  | Summarize, represent, and interpret data on two categorical and quantitative variables (6) |
|  | **Making Inferences and Justifying Conclusions (S-IC)** |
|  | Understand and evaluate random processes underlying statistical experiments (1, 2) |
|  | Make inferences and justify conclusions from sample surveys, experiments and observational studies (3, 4, 5, 6) |

Major Cluster Supporting Cluster Additional Cluster

If possible, cite the specific standards (e.g. G-MG.3) that this resource addresses:**Standards for Mathematical Practice (SMP) Alignment:**

PARCC Assessments will measure not only content, but the SMP as well. Not all SMP are addressed in every task/lesson. Which SMP does this resource address?

**✓ Check all that apply.**

|  |  |  |
| --- | --- | --- |
| Overarching |  | 1. Make sense of problems and persevere in solving them. |
|  | 6. Attend to precision. |
| Reasoning |  | 2. Reason abstractly and quantitatively. |
|  | 3. Construct viable arguments and critique the reasoning of others. |
| Modeling |  | 4. Model with Mathematics. |
|  | 5. Use appropriate tools strategically. |
| Finding Structure |  | 7. Look for and make use of structure. |
|  | 8. Look for and express regularity in repeated reasoning. |

**Assessing SMP:** Measuring the SMP can be challenging. List specific evidence of the SMP that this resource addresses. (What are your students doing or saying?)

**Content Focus Alignment:** Rich tasks have “mathematical stretch,” making them useful across several grade levels. It is important, however, to note the mathematics that aligns this task to appropriate course work. This is best understood by also noting the mathematics in the course prior and after.

Mathematics in this task thatapplies to Mathematics III**:**

How could this resource be adapted specifically to Mathematics II work?

How could this resource be adapted for more advanced courses such as Pre-Calculus, Calculus, Statistics, etc?

Additional ideas to consider with this resource include: